CASE REPORT

A surprising diagnosis: metastatic prostate cancer causing cervical lymphadenopathy

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SUMMARY

Cervical lymphadenopathy as an initial presentation for metastatic prostate cancer has been rarely described. Less than 30 cases have been published in medical literature whereby a lymph node biopsy revealed immunoreactivity for prostate-specific antigen (PSA) diagnosing metastatic prostate cancer. We present a unique scenario whereby an asymptomatic patient with previous high-risk gastric cancer presented to clinic with cervical lymphadenopathy. A hunt for a recurrence ensued to no avail and imaging of the head and neck showed no hint of a primary malignancy in those regions. A lymph node biopsy was undertaken which showed elements suggesting metastatic prostate cancer. The patient developed symptoms of urinary outflow obstruction shortly afterwards. Blood tests revealed a very high PSA and a bone scan showed widespread bony metastasis. He was started on androgen deprivation therapy with an improvement of his PSA and symptoms. A regular clinic follow-up has shown stable disease.

BACKGROUND

Prostate cancer is a common cause of morbidity among elderly men and has a spectrum of presentations. It can present with lower urinary tract symptoms, with local invasion to the bone or spinal cord, metastasis to local lymph nodes and asymptotically with elevated prostatic-specific antigen (PSA) levels. Very rarely has it been reported that cervical or supraclavicular lymphadenopathy is the first presentation of metastatic prostate cancer.¹

We describe a unique case of a patient who had a history of gastric cancer presented to clinic in one of his follow-up appointment with cervical lymphadenopathy. A search for the usual suspects of this presentation ensued but to no avail. Only after a lymph node biopsy it was revealed that the patient had metastatic prostate adenocarcinoma. This highlights the importance of a tissue diagnosis for patients and to also consider rare causes for common presentations when there is difficulty arriving at a particular diagnosis.

CASE PRESENTATION

An elderly man presented to clinic with swelling to the left side of his neck, anorexia and 10 kg of unintentional weight loss in 3 months. He reported no other symptoms. There were no symptoms of dysphagia, dyspepsia, bloating, abdominal pain, shortness of breath or change in bowel habit. He did not have any urinary symptoms such as hesitancy, difficulty voiding or dribbling.

Ten years previously he was diagnosed with a gastric adenocarcinoma and underwent a partial gastrectomy. He was staged as T3 N2 with involvement of seven of nine local lymph nodes that were surgically excised. Subsequently, he had adjuvant chemotherapy and radiation as per the Mayo Clinic regimen.² He was followed up in clinic and showed no evidence of disease after 10 years.

He was an ex-smoker of 20 pack-years and had chronic kidney disease due to hypertension. He also had an emergency aortic aneurysm repair and suffered from intermittent claudication of his left calf. His drug history included clopidogrel, ranitidine, simvastatin, bendroflumethiazide, ramipril and calcium supplementation. He had no family history of any malignancy. Physical examination was largely normal except for palpable anterior cervical lymph nodes on the left side of his neck.

INVESTIGATIONS**Blood tests**

Haemoglobin 10.4 g/dL, urea 13 mmol/L, creatinine 230 µmol/L, alkaline phosphate 200 U/L, PSA 518 ng/mL. Other blood tests including platelets, clotting profile, liver blood tests, calcium, thyroid function tests, carcinoembryonic antigen and CA 19-9 were normal.

Ultrasound

Neck ultrasound showed a left-sided level 2–4 cervical lymphadenopathy with posterior acoustic enhancement and loss of normal nodal architecture up to 11 mm in the short diameter axis.

CT scan

This showed no retropharyngeal nodal enlargement. There was no abnormality of the nasopharynx, oropharynx, hypopharynx or larynx. The thyroid gland was not enlarged. The mediastinal, axillary, paraoesophageal and pelvic nodes were within normal limits and the lungs were clear. The para-aortic nodes were enlarged.

Fine-needle aspiration cytology of lymph node

Not performed due to patient's preference.

Lymph node histology

This showed total replacement of lymph nodes by metastatic carcinoma displaying a cribriform growth pattern with nuclei containing prominent eosinophilic nucleoli (figure 1A). Immunohistochemical staining showed patchy positivity with AE1/AE3 and strong cytoplasmic positivity with PSA (figure 1B). CK7, CK20, CD45, S100, CD56 and mucin staining

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Figure 1 (A) Lymph node infiltrated by metastatic carcinoma displaying cribriform architecture (H&E×20). The cells contain amphophilic cytoplasm and prominent eosinophilic nucleoli. (B) Strong and diffuse cytoplasmic positivity with PSA (staining with CK7, CK20, S-100 protein, CD45 and CD56 was negative; rostate-specific antigen (PSA)×20). AE1/AE3 showed patchy positivity.

was negative. A diagnosis of metastatic prostatic adenocarcinoma was made with a Gleason score of 4+4=8.

Bone scan

Increased activity was seen in the medial aspect of the clavicle, proximal femurs, left acetabulum and the ribs bilaterally in keeping with bony metastasis.

DIFFERENTIAL DIAGNOSIS

- ▶ Gastric cancer recurrence
- ▶ Head and neck malignancy
- ▶ Lymphoma
- ▶ Prostate cancer
- ▶ Infection/inflammatory disease

OUTCOME AND FOLLOW-UP

Throughout his follow-up, the patient had not reported symptoms of bladder outflow obstruction or lower urinary tract symptoms. With the raised PSA value and evidence of bony metastases on nuclear medicine scans, he was diagnosed with metastatic prostate adenocarcinoma, with a Gleason score of 8. Subsequent examination of his prostate in clinic revealed a firm right lobe.

His case was subsequently discussed at the urology multidisciplinary team (MDT) meeting where it was decided to start the patient on androgen deprivation therapy (ADT). He was given Prostag (leuprolerin) injections, and cyproterone acetate was provided for a month and a half period. His PSA reduced from over 500–185 ng/mL and his disease was stable over 6 months. Monthly pamidronate injections for his bone pathology were also initiated. Femur, spine and hip joint radiographs showed no risk of fracture and so ADT has been continued. The patient is currently being followed up on a three-monthly basis in oncology clinic for review and injections.

DISCUSSION

Although prostate cancer is an extremely rare cause of cervical lymphadenopathy, it is the most common genitourinary cause of this presentation.³ The incidence of metastatic prostate adenocarcinoma to the supraclavicular lymph nodes is rare, with a reported rate of approximately 0.28%.¹ Prostate cancer usually spreads locally to adjacent pelvic lymph nodes and through direct invasion to nearby organs such as the bladder, rectum or spine. However, postmortem studies have shown cervical lymphadenopathy in patients with evidence of metastasis at a prevalence of between 0.25% and 1%.

Butler *et al*⁴ described a series of 19 patients, with prostate cancer, presenting initially with supraclavicular lymphadenopathy. Over half of these patients had a normal digital rectal examination. Cho *et al* reported 26 cases of metastatic prostate carcinoma in supradiaphragmatic lymph nodes, of which seven cases had a history of prostate carcinoma. Fifty-eight per cent

had abnormal rectal examinations.⁵ In another series of 35 patients with extrapelvic lymphatic spread from prostate carcinoma, the left supraclavicular nodes were the most common site of spread in 69% of cases and 75% of cases had abnormal digital rectal examination.⁶ The prognosis of metastatic prostate cancer to the head and neck is relatively good with ADT alone. One series reported an average survival for patients as 26 months.⁷ There have been case reports of patients being symptom-free for 9 years.

This case is unique due to the diagnostic difficulty posed by the patient's cervical lymphadenopathy. It was thought, following several discussions at MDTs, that the suspected diagnosis was recurrence of aggressive gastric carcinoma due to the fact that the latter disease is known to cause bone metastasis. It was only after 2 months since his presentation that a lymph node biopsy was undertaken to diagnose the patient with metastatic prostate cancer. This case highlights the importance of a full clinical examination in patients with persistent lymphadenopathy of uncertain aetiology; non-invasive tests such as a digital rectal examination and PSA should be carried out in a timely manner to exclude prostate cancer as a cause for this presentation.

Learning points

- ▶ Consider metastatic carcinoma as a rare cause of cervical lymphadenopathy in older patients.
- ▶ A lymph node biopsy is necessary to exclude other pathology in patients with previous malignancies such as gastric cancer.
- ▶ When immunohistochemical markers of common malignancies causing cervical lymph node metastasis are negative, prostate-specific antigen must be used to exclude prostate cancer.

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Patient consent Obtained.

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